

instant invention should not be limited only to such liquid crystal display apparatus of the reflection type.

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In embodiment 7 an explanation will be given, with reference to Fig. 20, of a to-be-corrected portion that is formed at part of a gate electrode 5 as diverted from the scan signal transmission line 4. In embodiment 7, the to-be-corrected portion is a neck portion of the gate electrode, having a width narrower than that of the other portions thereof.

Typically in a liquid crystal display apparatus of the transmission type including a TFT 7 with its gate electrode 5 diverted from its associated scan signal transmission line 4, any transparent pixel electrode 15 will not be formed in view of the fact that those regions in which a gate electrode 5's diverted or branch portion and drain electrode 11 plus source electrode are laid out (which employ no transparent electrode materials) become optically opaque regions which permit transmission of no rays of light. On the contrary, in the reflective liquid crystal display apparatus, it is possible to form the reflective pixel electrode 15 extending to overlies the upper part of the TFT 7 due to the fact that such apparatus is inherently designed to perform displaying operations by utilizing externally attendant light from the entire surface of its panel.

IN THE CLAIMS

Please amend claims 1, 3 - 4, 6, 8 - 9, 11, 13, 15, and 17 as follows:

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1. {ONCE AMENDED} A liquid crystal display apparatus comprising:
a pair of substrates disposed opposing each other;
a liquid crystal layer sandwiched therebetween;
a data signal transmission line for supplying data signals, laid out on one of the substrates;
a scan signal transmission line for supplying timing signals, laid out on the one of the substrates,

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a thin-film transistor including a gate electrode which is diverted from the scan signal transmission line, the thin-film transistor being electrically connected to the data and scan signal transmission lines;

an interlayer insulating film disposed so as to at least partially cover the data/scan signal transmission lines and the transistor; and

a pixel electrode disposed on the interlayer insulating film, the pixel electrode being electrically connected to a drain electrode of the thin film transistor via a contact hole which is provided in the interlayer insulating film,

wherein the interlayer insulating film and liquid crystal layer are disposed so as to overlie at least part of the drain electrode.

2. The liquid crystal display apparatus of claim 1, wherein the pixel electrode is provided with an opening formed in a region thereof on at least part of the drain electrode.

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3. {ONCE AMENDED} The liquid crystal display apparatus of claim 2, wherein the opening of the pixel electrode is formed so as to contact an outer periphery of the pixel electrode.

4. {ONCE AMENDED} The liquid crystal display apparatus of claim 1, wherein the drain electrode comprises a potential correction site which has a narrowed width.

5. The liquid crystal display apparatus of claim 1, wherein the interlayer insulating film is provided with an opening formed a region thereof on at least part of the drain electrode.

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6. {ONCE AMENDED} A liquid crystal display apparatus comprising:
a pair of substrates disposed opposing each other;

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a liquid crystal layer sandwiched therebetween;
a data signal transmission line for supplying data signals, laid out on one of the substrates;
a scan signal transmission line for supplying timing signals, laid out on the one of the substrates,
a thin-film transistor including a gate electrode which is diverted from the scan signal transmission line, the thin-film transistor being electrically connected to the data and scan signal transmission lines;
an interlayer insulating film disposed so as to at least partially cover the data/scan signal transmission lines and the transistor; and
a pixel electrode disposed on the interlayer insulating film, the pixel electrode being electrically connected to a drain electrode of the thin film transistor via a contact hole which is provided in the interlayer insulating film,
wherein the interlayer insulating film and liquid crystal layer are disposed so as to overlie at least part of the gate electrode.

7. The liquid crystal display apparatus of claim 6, wherein the pixel electrode is provided with an opening formed in a region thereof on at least part of the gate electrode.

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8. {ONCE AMENDED} The liquid crystal display apparatus of claim 7, wherein the opening of the pixel electrode is formed so as to contact an outer periphery of the pixel electrode.

9. {ONCE AMENDED} The liquid crystal display apparatus of claim 6, wherein the gate electrode comprises a potential correction site which has a narrowed width.

10. The liquid crystal display apparatus of claim 6, wherein

the interlayer insulating film is provided with an opening formed in a region thereof on at least part of the gate electrode.

11. {ONCE AMENDED} A liquid crystal display apparatus comprising:
- a pair of substrates disposed opposing each other;
 - a liquid crystal layer sandwiched therebetween;
 - a data signal transmission line for supplying data signals, laid out on one of the substrates;
 - a scan signal transmission line for supplying timing signals, laid out on the one of the substrates;
 - an auxiliary capacitance line for forming an auxiliary capacitance,
 - a thin-film transistor including a gate electrode which is diverted from the scan signal transmission line, the thin-film transistor being electrically connected to the data and scan signal transmission lines,
 - an interlayer insulating film disposed so as to at least partially cover the data/scan signal transmission lines and the transistor; and
 - a pixel electrode disposed on the interlayer insulating film, the pixel electrode being electrically connected to a drain electrode of the thin film transistor via a contact hole which is provided in the interlayer insulating film,
 - wherein the interlayer insulating film and liquid crystal layer are disposed so as to overlie at least part of a diverted portion which is diverted from the auxiliary capacitance line.
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12. The liquid crystal display apparatus of claim 11, wherein the pixel electrode is provided with an opening formed in a region on part of the diverted portion of the auxiliary capacitance line.

a21 13. {ONCE AMENDED} The liquid crystal display apparatus of claim 12, wherein the opening of the pixel electrode is formed so as to contact an outer periphery of the pixel electrode.

14. The liquid crystal display apparatus of claim 11, wherein the interlayer insulating film is provided with an opening formed in a region thereof on part of the diverted portion of the auxiliary capacitance line.

a28 15. {ONCE AMENDED} A liquid crystal display apparatus comprising:
a pair of substrates disposed opposing each other;
a liquid crystal layer sandwiched therebetween,
a data signal transmission line for supplying data signals, laid out on one of the substrates;
a scan signal transmission line for supplying timing signals, laid out on the one of the substrates,
a thin-film transistor including a gate electrode which is diverted from the scan signal transmission line, the thin-film transistor being electrically connected to the data and scan signal transmission lines;
an interlayer insulating film disposed so as to at least partially cover the data/scan signal transmission lines and the transistor; and
a pixel electrode disposed on the interlayer insulating film, the pixel electrode being electrically connected to a drain electrode of the thin film transistor via a contact hole which is provided in the interlayer insulating film,
wherein the pixel electrode is provided with an opening formed at a specified location nearest to the data signal transmission line at an outer periphery of the pixel electrode.

16. The liquid crystal display apparatus of claim 15, wherein the opening of the pixel electrode is in contact with a specific location at which the pixel electrode is nearest to the outermost scan signal transmission line, and is formed in a region on at least part of the drain electrode.

Q29 17. {ONCE AMENDED} A liquid crystal display apparatus comprising:
a pair of substrates opposing each other;
a liquid crystal layer sandwiched therebetween;
a data signal transmission line disposed on one of the substrates;
a switching element disposed on the one substrate;
an interlayer insulating film formed so as to at least partially cover the data signal transmission line and the switching element; and
a pixel electrode disposed on the interlayer insulating film;
the switching element being interposed between the data signal transmission line and the pixel electrode,
the pixel electrode being electrically connected to the switching element via a contact hole formed in the interlayer insulating film,
wherein the pixel electrode has an opening to expose a potential correction site of the liquid crystal display apparatus.

PLEASE ADD NEW CLAIMS 18 - 36 AS FOLLOWS:

Q30 18. {NEW} A liquid crystal display apparatus comprising:
a switching device connected to a gate line and a signal line;
a pixel electrode connected to the switching device;
an opening formed in the pixel electrode to expose a potential correction site provided therebeneath.

19. {NEW} The liquid crystal display apparatus of claim 18, wherein the opening is formed at a periphery of the pixel electrode.

20. {NEW} The liquid crystal display apparatus of claim 18, wherein the opening is formed at a periphery of the pixel electrode which is proximate the signal line.

21. {NEW} The liquid crystal display apparatus of claim 18, wherein the switching device comprises a drain electrode, and wherein the potential correction site is at a drain electrode.

22. {NEW} The liquid crystal display apparatus of claim 21, wherein the switching device comprises a drain electrode, and wherein the potential correction site is a narrowed portion of the drain electrode.

23. {NEW} The liquid crystal display apparatus of claim 18, wherein the switching device comprises a gate electrode, and wherein the potential correction site is at a gate electrode.

24. {NEW} The liquid crystal display apparatus of claim 23, wherein the switching device comprises a gate electrode, and wherein the potential correction site is a narrowed portion of the gate electrode.

25. {NEW} The liquid crystal display apparatus of claim 18, further comprising an auxiliary capacitance line for forming an auxiliary capacitance, and wherein the potential correction site is a branch of the auxiliary capacitance line.

26. {NEW} The liquid crystal display apparatus of claim 25, further comprising an auxiliary capacitance line for forming an auxiliary capacitance, and wherein the

potential correction site is a narrowed width portion of the branch of the auxiliary capacitance line.

27. {NEW} The liquid crystal display apparatus of claim 18, further comprising an interlayer insulation film generally formed beneath the pixel electrode but not beneath the opening which exposes the potential correction site.

28. {NEW} A liquid crystal display apparatus comprising:
a switching device connected to a gate line and a signal line;
a pixel electrode connected to the switching device;
an opening formed in the pixel electrode to expose a potential correction site provided therebeneath;

an interlayer insulation film generally formed beneath the pixel electrode but not beneath the opening which exposes the potential correction site.

29. {NEW} The liquid crystal display apparatus of claim 28, wherein the potential correction site is at one of a drain electrode of the switching device; a gate electrode of the switching device; and a branch of an auxiliary capacitance line.

30. {NEW} The liquid crystal display apparatus of claim 28, wherein the opening is formed at a periphery of the pixel electrode.

31. {NEW} The liquid crystal display apparatus of claim 30, wherein the opening is formed at a periphery of the pixel electrode which is proximate the signal line.

32. {NEW} A liquid crystal display apparatus comprising:
a switching device connected to a gate line and a signal line;
a common line;



a drain electrode connected to the switching device, the drain electrode having a section which overlies at least part of the common line;

a pixel electrode connected to an electrical connection section of the drain electrode;

a first correction site provided at a narrowed portion of the drain electrode, the first correction site being situated between the switching device and the electrical connection section of the drain electrode;

a second correction site comprising a narrowed portion of the drain electrode, the second correction site being intermediate the electrical connection section of the drain electrode and the section of the drain electrode which overlies at least part of the common line;

an opening formed in the pixel electrode to expose the second potential correction site.

33. {NEW} A liquid crystal display apparatus comprising:

a switching device connected to a gate line and a signal line, the switching device being situated over the gate line;

a common line including a common branch diverted from the common line;

a drain electrode connected to the switching device, the drain electrode having a section which overlies at least part of the common line;

a pixel electrode connected to an electrical connection section of the drain electrode, the pixel electrode also overlying at least a portion of the common branch diverted from the common line;

a first correction site provided at a narrowed portion of the drain electrode, the first correction site being situated between the switching device and the electrical connection section of the drain electrode;

a second correction site comprising a narrowed portion of the drain electrode, the second correction site being intermediate the electrical connection section of the drain

electrode and the section of the drain electrode which overlies at least part of the common line;

a first opening formed in the pixel electrode to expose the first potential correction site;

a second opening formed in the pixel electrode to expose the second potential correction site;

a third opening formed in the pixel electrode to expose at least a portion of the common branch diverted from the common line.

34. {NEW} A liquid crystal display apparatus comprising:

a switching device connected to a first gate line and a signal line;

a drain electrode connected to the switching device, the drain electrode having a section which overlies at least part of a second gate line;

a pixel electrode connected to an electrical connection section of the drain electrode;

a first correction site provided at a narrowed portion of the drain electrode, the first correction site being situated between the switching device and the electrical connection section of the drain electrode;

a second correction site comprising a narrowed portion of the drain electrode, the second correction site being intermediate the electrical connection section of the drain electrode and the section of the drain electrode which overlies at least part of the second gate line;

a first opening formed in the pixel electrode to expose the first potential correction site; and

a second opening formed in the pixel electrode to expose the second potential correction site.